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Frequency–time correlation of inhomogeneous broadening in a three-level system and the stimulated photon echo locking effect

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Abstract

© 2016, Pleiades Publishing, Ltd.The frequency–time correlation of inhomogeneous broadening on different transitions in a threelevel resonant medium in the presence of external spatially nonuniform electric fields is considered. It is shown that, under a certain relationship between the magnitudes of gradients of external nonuniform electric fields acting at different moments of time, it is possible to control the magnitude of the frequency–time correlation on different frequency transitions. An increase in the frequency–time correlation coefficient with certain strengths of external spatially nonuniform electric fields leads to the recovery of the phase memory of the system and an increase in the stimulated photon echo intensity.

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